

Genesis

Set up guide for The Genesis 928 Subwoofer

Introduction

While many companies have rushed to fill the growing home theater market with quick redesigns of existing products, a few companies have taken their time to do it right. Our goal in the design of both a high end music and home theater product was to set a new standard of performance for **both** music and video - a benchmark for the industry. After many years of designing, listening and redesigning, we believe that we have achieved our goal in the Genesis 928 subwoofer.

Based on all new technology in both woofer design and the servo controlled power amplifier, the 928 is a musically accurate design in the tradition of all Genesis reference loudspeakers. So honest is this speaker's performance that the 928 is equally at home in the finest music systems as in home theater applications.

The 12 inch woofers employed in the Genesis 928 subwoofer are a custom designed and proprietary metal cone configuration that exhibits great strength and rigidity with no cone flexure. The benefits of no cone flexure include extremely low levels of distortion and zero break up modes within the useable frequency band.

The heart of the Genesis 928 servo subwoofer system is our exclusive accelerometer based motional feedback servo system. First introduced to high end audio in 1968 by Arnie Nudell in the legendary Infinity Servo Statik One, servo bass systems continue to represent the ultimate in low frequency response today.

The concept of servo bass is an easy one to understand. It employs, through the use of an accelerometer sensor, active feedback which constantly monitors the performance of the woofer and electronically compares it to the input making instantaneous corrections.

Without this feedback loop the mass of the woofer is too great to control properly and distortion occurs. Typical non-servo woofer systems have distortion levels that exceed 10% at even moderate levels. The Genesis servo bass system reduces this distortion to below one percent at almost any output level.

Positioning the 928 for music

If your primary usage of the 928 is in a music system, we recommend you follow this setup guide.

We recommend that the 928 be placed behind and to the outside of your main music speakers. If you only have one Genesis 928 subwoofer, we recommend that you place it on the right side near the corner. This is not a critical recommendation and you may place the single subwoofer either on the right or the left. We recommended the right (if there is a choice) because it the side in an orchestra that the bass instruments are typically located. In any case **try to avoid placing the subwoofer in the center of your rear wall.**

Make sure you do not plug the woofer into a switched outlet. Make sure the Genesis 928 is plugged into a wall outlet that is always on. We recommend against the use of an extension cord for the AC power. If you are forced to use an extension cord, make certain it is as heavy a gauge as possible.

Positioning the 928 for Video

There are a number of possible positioning schemes for video applications. Our first recommendation is that you visit with the dealer you purchased your video sound system from and get his or her advice.

Typically, in video applications, the front three speakers Left, Right and Center (LCR) speakers are on stands, are mounted to the wall or many times are the same speakers used with your music system with the addition of the center channel. Depending on the availability of space, you may place a Genesis 928 in the front or the back of the system. If you have a dual purpose system, music and video, you might consider following the music setup instructions first (if space allows).

In a dual woofer system, it is permissible to place one subwoofer in front and one subwoofer in the rear to increase the "surround effect" in your video system if you wish. The Genesis 928, in a video system environment, will typically be placed fairly close to the wall or in a corner. As with the recommendations for the music system setup **try to not place the subwoofer in the middle of any wall.**

Make sure you do not plug the woofer into a switched outlet. Make sure the Genesis 928 is plugged into a wall outlet that is always on. We recommend against the use of an extension cord for the AC power. If you are forced to use an extension cord, make certain it is as heavy a gauge as possible.

After positioning your Genesis 928, connect to your preamplifier, power amplifier, or processor.

Preamp input

Use a good quality interconnect cable to connect your preamplifier's output to the low level inputs on the back of the subwoofer. We **strongly recommend that you do not use interconnects longer than 10 feet (3.2 meters)** to connect the preamplifier outputs to your Genesis 928 subwoofer. On many preamplifiers, use of an interconnect that is too long will negatively affect the performance of your preamplifier because of the high capacitance of the cable across the output of your preamplifier. If you must employ a run of cable longer than 10 feet (3.2 meters) we recommend that you use the Genesis 928's high level inputs.

If your preamplifier does not have two outputs, use a "Y" connector to split the signal. The Genesis servo subwoofer amplifier presents a very easy, high impedance load to your preamplifier and can easily be used with the "Y" connector with no degradation to your main signal.

If you are using only one subwoofer, connect both the left and right low level inputs into the one Genesis 928 subwoofer. The Genesis 928 will automatically create the appropriate mono signal.

At this point, you can turn on the woofer amplifier. Adjust the low pass filter (how high the woofer goes) to 85. Set the "Gain" control to 30 to start with.

Power amp, high level input

To connect the high level inputs of the Genesis 928 subwoofer, take the output of your power amplifier and, using a good quality speaker cable, connect to the binding posts on the back of the Genesis 928 subwoofer. You may also take the signal off of the back of both your main loudspeaker terminals if this is more convenient. Using the high level inputs to feed the Genesis 928 power amplifier will not degrade the sound quality of either your main system or the Genesis 928 subwoofer. Make sure that you maintain proper polarity. This means that the plus (+) terminal of your amplifier **must** be connected to the plus (+/red) terminal on the back of the Genesis 928.

If you are using only one subwoofer, connect both the left and right high level inputs into the one Genesis 928 subwoofer. The Genesis 928 will automatically create the appropriate mono signal.

At this point, you can turn on the woofer amplifier. Adjust the low pass filter (how high the woofer goes) to 85. Set the "Gain" control to 30 to start with.

Video processor Input

If you are using the Genesis 928 for video only application, the video inputs bypass the the low pass filter of your 928 and will allow you to use the subwoofer output on your home theater (Dolby digital, 5.1) processor. While the gain control on the 928 will still function, the lowpass filter control will not.

At this point, you can turn on the woofer amplifier. Set the "Gain" control to 30 to start with.

If you must employ a run of cable longer than 10 feet (3.2 meters) we recommend that you use the Genesis 928's high level inputs.

Making your music or video system sound correct

The Genesis 928 subwoofer system is perfect for both music and video. The setup for either is very similar and the goals should be quite the same too. In our opinion, the end goal of adding a high end subwoofer should be to not "hear" the subwoofer work (in a music system), but rather to add the appropriate amount of low end that is currently missing in your system.

With music, the full frequency range of the orchestra should be reproduced with proper dynamic range and realism, from the lowest notes of a pipe organ to the whack of the timpani or the pluck of the lowest string on a Fender bass.

With video, the same goals should be sought after so the results are both realistic and exciting as the roar of jet planes rumble through your living room and prehistoric creatures shake the earth.

With proper setup and placement, you can achieve both stunning realism and musically correct and natural bass.

Roughing the system in

Music is the best way to begin your setup procedure. We suggest that video sources be used only after you have setup the system to properly reproduce music.

We suggest that you start with a single vocal with instrumental accompaniment because the sound of the human voice is more easily recognizable than many instruments and is the least complex sound to deal with.

Turn the gain control of the subwoofer amplifier up or down until the voice sounds correct. Concentrate on the mid bass regions (as opposed to the very low bass in your recording) to achieve a natural blend. The voice and the music accompaniment should sound as if it were cut from one cloth, not separate.

If the voice sounds "thin" or does not have enough "chest" to its sound, turn the woofers amplifier's volume up till it does, or at this point, you may want to experiment with increasing or decreasing the low pass filter control. This control will raise or lower the frequency cutoff point of the woofer. If you find that the sound is "thin" or lacking in mid bass **and that turning the volume of the woofer amplifier up to "thicken" the sound creates too much low bass**, this is a good indication that you may want to turn the low pass filter up to a higher number instead. This will extend the upper bass regions without affecting the low bass level.

Next, set the woofers using more than just a voice. Select some music that you know to have good **deep** bass. Using the volume control on the servo amplifier's remote control, set the woofers for a **natural** and powerful bass sound. Use a symphonic piece of music if you can, or use a natural bass instrument for your guide. Try to make it sound real. You may have to return to the vocal to make sure you have not gone too far in one direction.

If, at this point, it does not have enough mid bass, turn the low pass number to a higher position or, alternately, position the main speakers closer together in order to achieve better mid bass coupling between the main speakers. If it sounds too "fat" turn the low pass control down or adjust the volume. At this point it is suggested to use the low pass filter control until you get to the refinement stage.

Low bass

With the speakers positioned in the recommended placement, low bass in the room should not be a problem.

Should you have too much bass, simply turn the volume down. Too little, and the opposite will apply. If the use of this control causes other problems (such as too much or too little mid bass) you can alternately position the woofers closer to the rear wall (more bass) or farther away from the rear wall (less bass).

Notes

If you find there isn't enough deep bass, your first remedy is the gain control on the woofer amplifier. This has several limitations. First, turned up too high, you may get some distortion on very low frequencies. Secondly, you may make the mid bass produced by the top of the woofer out of proportion with the mid bass produced by the bottom of the mid bass coupler. This would tend to sound "boomy" in the mid bass regions.

A good rule of thumb is to first set the gain control of the subwoofer for proper midbass rather than low bass. The theory is, if the midbass is correct, then the low bass should be very close to correct. If the midbass is proper and the low bass is still not right, here are some other suggestions.

Push the main speakers back towards the rear wall. This will increase the coupling of the main loudspeakers woofers to the room. Do this procedure in small increments (approximately one inch at a time) and return often to the recordings you have used to adjust the front to back depth and soundstage properties of your system. It is easy, yet unproductive, to go too far in one direction.

A good balance between proper low bass extension and a deep and spacious soundstage needs to be established to optimize your new speaker's performance.

It should be noted that when you originally setup your main loudspeakers, you most likely made placement decisions based on the quality of imaging and proper bass levels. We would advise you to now think in terms of re-positioning your main speakers strictly from imaging and tonal balance, and let your new 928 subwoofers take care of the bass.

Note: Should your woofer amplifier unexpectedly turn off and you are unable to turn it back on, you may have overheated the amplifier. It will take up to thirty minutes for the amplifier to turn back on. Be patient. The causes for this are poor ventilation or too much volume. If the amplifier is well ventilated then you have the volume control turned up too high. Refer to the section on increasing the low frequency response of your speakers without turning up the volume control.

Fine tuning an audio or video system is an art that will take time and patience. It can be one of the more rewarding learning experiences you will have in the pursuit of music or video and their enjoyment.

One of the best pieces of advice we can offer is that you take advantage of the ear's ability to identify similarities in sound. This ability is useful in fine tuning your system because if every recording you listen to (or every video you watch) has a similarity of sound (too much or too little of a certain frequency for instance) then you can be fairly certain that you have yet to perfect your setup. Keep at it and remember to enjoy your music and video as you work on perfecting your setup.